

Application No.: 10/089,312

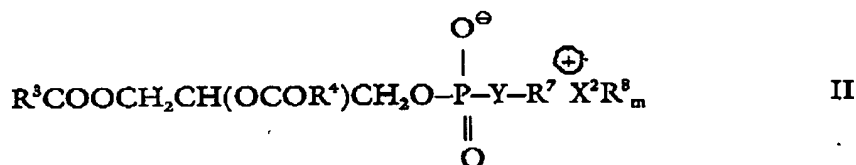
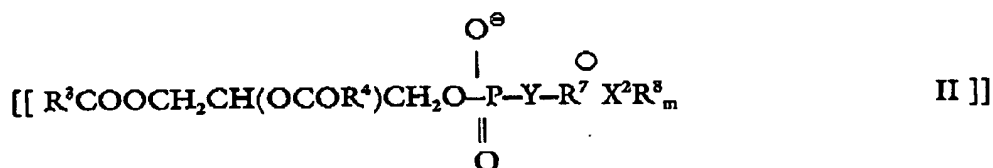
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AMENDMENTS TO THE CLAIMS

21 - 37 (canceled)

38 (currently amended). Method of [I] eliciting an IgA response in a mammal comprising administering orally to the mammal a composition comprising a nucleic acid operatively encoding an antigen complexed with or entrapped within liposomes formed from liposome forming components comprising

- a) at least one cationic compound
- b) zwitterionic phospholipid consisting of one or two compounds having the general formula II



in which R^3 and R^4 are the same or different and are a group of the formula $[[CH_3(CH_2)_e(CH=CH-CH_2)_g-]] CH_3(CH_2)_f(CH=CH-CH_2)_g(CH_2)_h$ in which f is 0 to 6, each of e and $g + 3f$ are 0 to 23 and $e + g$ is in the range 12 to 23;

R^7 is a C_{1-8} alkanediyl group;

Y is -O- or a bond;

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X^2 is N, P or S;

m is 3 when X^2 is N or P and is 2 when X^2 is S; and

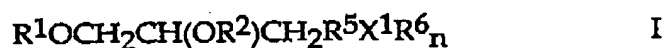
the groups R^8 are the same or different and are selected from the group consisting of hydrogen, C_{1-8} alkyl, C_{6-11} aryl or aralkyl, or two or three of the groups R^8 together with X^2 form a saturated or unsaturated heterocyclic group having 5 to 7 ring atoms;

in which at least 25% by mole of the individual liposome forming components have a transition temperature of more than 40°C ,

wherein the molar ratio of cationic compound to zwitterionic phospholipid is in the range 1:1 to 1:10,

whereby an IgA response to the said antigen is generated.

39 (previously presented). A method according to claim 38 in which the cationic compound has the general formula I,



in which R^1 and R^2 are the same or different and are a group of the formula $CH_3(CH_2)_a(CH=CH-CH_2)_b(CH_2)_c(CO)_d$ in which b is 0 to 6, a and c are each selected from 0-23 and $(a + c + 3b)$ is in the range 12-23 and d is 0 or 1;

R^5 is a bond or a C_{1-8} alkanediyl group;

X^1 is N, P or S;

n is 3 where X^1 is N or P and is 2 where X^1 is S; and

the groups R^6 are the same or different and are selected from the group consisting of hydrogen, C_{1-8} alkyl, C_{6-12} aryl and aralkyl, or two or three of the groups R^6 together with X^1 form a saturated or unsaturated heterocyclic group having 5 to 7 ring atoms.

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40 (previously presented). A method according to claim 39 in which R^1 is the same as R^2 and R^3 is the same as R^4 .

41 (previously presented). A method according to claim 40 in which R^1 and R^2 represent a different group to R^3 and R^4 .

42 (previously presented). A method according to claim 40 in which R^1 and R^2 represent a different group to R^3 and R^4 , in which in R^1 and R^2 , b is 1, and in which $(a + c)$ is in the range 10 to 20.

43 (previously presented). A method according to claim 38 in which the liposome forming materials comprise two zwitterionic phospholipids in each of which Y is O, X^2 is N, and the groups R^8 of the first phospholipid are all hydrogen and the groups R^8 of the second phospholipid are all C_{1-14} alkyl, and R^7 is $(CH_2)_h$ in which h is 2 or 3.

44 (previously presented). A method according to claim 43 in which the groups R^3 and R^4 of the said first phospholipid are the same and each is a group in which f is 1 and $(e + g)$ is in the range 10 to 20.

45 (previously presented). A method according to claim 44 in which in the groups R^3 and R^4 of the said second phospholipid are the same and each is a group in which f is 0 and $e + g$ is in the range 15 to 23.

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46 (previously presented). A method according to claim 45 in which the said second zwitterionic phospholipid is selected from the group consisting of distearoylphosphatidylcholine, distearoylphosphatidylethanolamine, dipalmitoylphosphatidylcholine and dipalmitoylphosphatidylethanolamine.

47 (previously presented). A method according to claim 38 in which the cationic compound is cholesterol-3 β -N-(dimethylaminoethyl) carbamate.

48 (previously presented). A method according to claim 38 in which the nucleic acid is entrapped within the liposomes.

49 (previously presented). A method according to claim 38 in which the mammal is a human.

50 (previously presented). A method according to claim 38 in which in the groups R³ and R⁴ of at least one phospholipid are the same.

51 (previously presented). A method according to claim 50 in which the mammal is a human.

52 (previously presented). A method according to claim 51 in which at least 50% by mole of the individual liposome forming components have a transition temperature of more than 40°C.

53 (previously presented). A method according to claim 50 in which there are two phospholipid compounds and the groups R³ and R⁴ in each phospholipid are the same.

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54 (previously presented). A method according to claim 38 in which at least 50% by mole of the individual liposome forming components have a transition temperature of more than 40°C.

55 (previously presented). A method according to claim 39 in which in the groups R³ and R⁴ of at least one phospholipid are the same.

56 (previously presented). A method according to claim 55 in which the mammal is a human.

57 (previously presented). A method according to claim 55 in which there are two phospholipid compounds and the groups R³ and R⁴ in each phospholipid are the same.